## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:

VLADIMIR GRUSHIN ET AL.

CASE NO.: PE0649 US DIV1

**UNKNOWN** APPLICATION NO.:

CONFIRMATION NO.: UNKNOWN

GROUP ART UNIT:

UNKNOWN

**EXAMINER: UNKNOWN** 

FILED: CONCURRENTLY HEREWITH

FOR:

ELECTROLUMINESCENT IRIDIUM COMPOUNDS WITH FLUORINATED

PHENYLPYRIDINES, PHENYLPYRIMIDINES, AND PHENYLQUINOLINES AND

**DEVICES MADE WITH SUCH COMPOUNDS** 

## **INFORMATION DISCLOSURE STATEMENT**

**Assistant Commissioner for Patents** Washington, D.C. 20231

Sir:

In compliance with 37 CFR 1.97 and 1.98, Applicants bring to the attention of the U.S. Patent and Trademark Office information that may be helpful in the examination of the above-identified patent application. All of the information is listed on attached Forms PTO/SB/08A, PTO/SB/08B, and PTO-892.

Benefit of the earlier filing dates of U.S. Patent Application No. 10/027,421 filed December 20, 2001 and U.S. Patent Application No. 09/879,014 filed June, 12, 2001 are claimed under 35 U.S.C. 120 for the above-referenced application and information cited in the priority applications is not supplied with this Information Disclosure Statement.

Should any fee be required in connection with the filing of this Information Disclosure Statement, please charge such fee to Deposit Account No. 04-1928 (E. I. du Pont de Nemours and Company).

Respectfully submitted,

RY ANN CAPRIA Attorney for Applicants

Registration No. 32,659

Telephone: (302) 992-3749 Facsimile: (302) 892-7949

Dated: October 29, 2003

**Enclosures** 

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE to respond to a collection of information unless it contains a valid OMB control number. Under the Paperwork Reduction Act of 1995, no persons are

bstitute for form 1449A/PTO	Complete if Kn wn

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

2 Sheet of

Complete if Kn wn					
Application Number	10/027,421				
Filing Date	DECEMBER 20, 2001				
First Named Inventor	VLADIMIR GRUSHIN ET AL.				
Group Art Unit	2815				
Examiner Name	UNKNOWN				
Attorney Docket Number	PE0649 US CIP				

				U.S. PATE	NT DOCUMENTS	
Examiner Initials *	Cite No.1	Document Number  Number - Kind Code <sup>2</sup> (if known)		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-	2001/0019782 A1	09/06/2001	IGARASHI ET AL.	
		US-	2001/0053462 A1	12/20/2001	MISHIMA	
		US-				
		US -				
		US -				
		US -				
		US -				
		US -				
		US -				
		US -				
		US-				
		US -				
		US-				
_		US-				
		US -				
		US-				
		US-				
		US-				
		US-			-	
		US-				

				FOREI	GN PATENT	DOCUMENTS		
Examiner	Cite	Foreig	n Patent Doo	ument	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where	_
Initials*	1 1	CountryCode <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> ( <i>if</i> known)	MM-DD-YYYY	Applicant of Cited Docum	nent Relevant Passages of Relevant	Т
		EP	1175128	A2	01/23/2002	FUJI PHOTO FILM C	io.	
		wo	96/03410	A1	02/08/1996	BOEHRINGER MANNHEIM GMBH	1	Ī
								Ĺ
Examine Signature						Date Considered		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



<sup>&</sup>lt;sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at <a href="www.uspto.gov">www.uspto.gov</a> or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the tow-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols asindicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

10/027,421

Substitute for form 1449A/PTO Complete if Known **Application Number** 10/027,421 INFORMATION DISCLOSURE Filing Date **DECEMBER 20, 2001** STATEMENT BY APPLICANT First Named Inventor VLADIMIR GRUSHIN ET AL. Group Art Unit 2815 (use as many sheets as necessary) **UNKNOWN Examiner Name** 

Attorney Docket Number

Sheet

of

	ĭ	OTHER PRIOR ART NON PATE				
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				
		DJUROVICH, PETER I. ET AL., Ir(III) Cyclometalated Complexes As Efficient Phosphorescent Emitters in Polymer Blend and Organic LEDs, Polymer Preprints, 2000, 770-771, 41(1)				
		CHATANI, NAOTO ET AL., Ru3(CO)12-Catalyzed Reaction of Pyridylbenzenes with Carbon Monoxide and Olefins. Carbonylation at a C-H Bond in the Benzene Ring, J. Org. Chem., 1997, 2604-2610, 62, American Chemical Society				
		GOSMINI, CORINNE ET AL., Electrosynthesis of functionalized 2-arylpyridines from functionalized aryl and pyridine halides catalyzed by nickel bromide 2,2'-bipyridine complex, Tetrahedron Letters, 2000, 5039-5042, 41, Elsevier Science Ltd.				
		CACCHI, SANDRO ET AL., The Palladium-Catalyzed Transfer Hydrogenation/Heterocyclization of B-(2-Aminophenyl-a,B-ynones. An Approach to 2-Aryl- and 2-Vinylquinolines, Synlett, 1999, 401-404, No. 4, Thieme Stuttgart, New York				
	BALDO, M. A. ET AL., Very high-efficiency green organic light-emitting devices based on electrophosphorescence, Applied Physics Letters, July 5, 1999, 4-6, 75(1) American Institue of Physics  BALDO, M. A. ET AL., High-efficiency fluorescent organic light-emitting devices using a phosphorescent sensitizer, Nature, February 17, 2000, 750-753, 403, Macmillan Magazines Ltd.					
		WANG, YUE ET AL., (Hydroxyphenyl)pyrid electroluminescence material, Chemical Abst				
		DEDEIAN K. ET AL., A New Synthetic Route to the Tris-Ortho-Metalated Complexes of Iridium(III) wi 1687, 30(8), Ar		nylpyridines, Inorg. Chem., 1991, 1685-		
Examiner Signature			Date Considered			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



<sup>1</sup> Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

of 2

Sheet

PE0649 US CIP

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO Complete if Kn wn 10/027,421 Application Number INFORMATION DISCLOSURE **DECEMBER 20, 2001** Filing Date STATEMENT BY APPLICANT VLADIMIR GRUSHIN ET AL. First Named Inventor Group Art Unit 2815 (use as many sheets as necessary) **Examiner Name** UNKNOWN

Attorney Docket Number

	U.S. PATENT DOCUMENTS								
Examiner Initials *	Cite No.1	U.S. Patent Document  Kind Code <sup>2</sup> Number (if known)		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear			
		5,552,678	<u> </u>	TANG ET AL.	09/03/96				
		2001/0019782	A1	IGARASHI ET AL.	09/06/01				
		60/347,910		LECLOUX ET AL.	11/07/01				
		60/347,911		LECLOUX ET AL.	11/07/01				
			<u> </u>						
•									
			ļ						
			_						
			ļ			<u></u>			
•	-	-	<del> </del>						

				FOREIG	N PATENT DOCU	MENTS		
Examiner Initials*	Cite No. <sup>1</sup>	Fore Office <sup>3</sup>		ment ind Code <sup>5</sup> if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Тв
		wo	00/70655	A2	Princeton Univ. and USC	11/23/00		
		wo	96/03410	A1	Boehringer Mannheim	02/08/96		
							<u> </u>	
		-						

Examiner Signature	Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. 2 See attached Kinds of U.S. Patent Documents. 3 Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>6</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>8</sup> Applicant is to place a check mark hee if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO Complete if Known Application Number 10/027,421 INFORMATION DISCLOSURE Filing Date **DECEMBER 20, 2001** STATEMENT BY APPLICANT First Named Inventor VLADIMIR GRUSHIN ET AL. Group Art Unit 2815 (use as many sheets as necessary) **UNKNOWN Examiner Name** PE0649 US CIP Sheet Attorney Docket Number

·- <u>-</u>		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
		BALDO, M.A. et al., HIgh-efficiency fluorescent organic light-emitting devices using a phosphorescent sensitizer, Nature, February 17, 2000, 750-753, Vol. 403	
		DJUROVICH, PETER I. et al., Ir(III) Cyclometalated Complexes as Efficient Phosphorescent Emitters in Polymer Blend and Organic LEDs, Polymer Reprints, 2000, 770-771, 41(1)	
		BALDO, M.A. et al., Very high-efficiency green organic light-emitting devices based on electrophorescence, Applied Physics Letters, July 5, 1999, 4-6, 75(1), American Institute of Physics	
		LOHSE, OLIVIER, et al., The Palladium Catalysed Suzuki Coupling of 2- and 4-Chloropyridines, Synlett, 1999, 45- 48, No. 1, Thieme Suttgart, New York	
		BALDO, M.A. et al., Highly efficient phosphorescent emission from organic electroluminescent devices, Nature, September 10, 1998, 151-154, Vol 395	
		DEDEIAN, K. et al, A New Synthetic Route to the Preparation of a Series of Strong Photoreducing Agents: fac Tris-Ortho-Metalated Complexes of Iridium (III) with Substituted 2-Phenylpyridines, , Inorganic Chemistry, 1991, 1685-1687, 30(8)	

Examiner	Date		ı
Signature	Considered		ı
Signature	Considered	j j	1

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

<sup>&</sup>lt;sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

## Applicant(s)/Patent Under Reexamination 09/879,014 GRUSHIN ET AL. Notice of References Cited Examiner Art Unit Page 1 of 1 Erik Kielin 2813

Application/Control No.

**U.S. PATENT DOCUMENTS** 

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY		Classification					
	Α	US-3,718,488	02-1973	Trofimenko et al.	Trofimenko et al.					
	В	US-2002/0064681 A1	09-2001	Takiguchi et al.		428/690				
	С	US-								
	D	US-								
	E	US-								
	F	US-								
	G	US-								
	н	US-								
	ı	US-								
	J	US-								
	к	US-								
	L	US-								
	М	US-								
				FOREIGN PATENT DOCUM	IENTS					
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification				
	N									
	0									
	Р									
	Q									
	R	•								
L	s									
	Т									
		NON-PATENT DOCUMENTS								
*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)								
x	U	Thompson et al. "Ir(III) cyclometalated complexes as efficient phosphorescent emitters in polymer blend organic LEDs" Polymer Preprints 41(1), 2000, pp. 770-771.								
x	>	Dedeian et al. "A new synthetic route to the preparation of a series of strong photoreducing agents: fac tris-othro-metalated complexes of iridium(III) with substituted 2-phenylpyridines" Inorganic Chemistry, Vol. 30, 1991, 1685-1687.								
	w									

"A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).) Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office PTO-892 (Rev. 01-2001)